PRAXAIR SURFACE TECHNOLOGIES

Praxair Surface
Technologies
7615 Fairview St.
Houston, TX 77041
greg_groff@praxair.com
Cell: 443-831-1536

October 13, 2015

BASF – The Chemical Company
Gregory Menz (Maintenance Supervisor)
120 Pine Street
Elyria, OH 44035
Office: 440-329-2538
Cell: 440-328-7173
Gregory.menz@basf.com

Praxair Surface Technologies Quote Number 101315-4FP

Ref: (1) PK Double Cone Blender (9ft 8in x 7ft 3in)

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greg_groff@praxair.com
Cell: 443-831-1536

non-responsive

Notes:
If favored a purchase order for this project please reference Praxair Surface Technologies, quote number on the P.O. Send Purchase order too: **greg_groff@praxair.com**

Send the Parts Too:
Praxair Surface Technologies
7615 Fairview Street
Houston, TX 77041
Attn: Greg Groff

non-responsive

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greg_groff@praxair.com
Cell: 443-831-1536

non-responsive

Thank you for your interest in **Praxair Surface Technologies**. Please feel free to contact me if you have any questions regarding this quotation. We look forward to working with you on this project.

Kindest Regards,

Greg Groff

Praxair Surface Technologies
Mobile: 443-831-1536

Service **Mat**erial Technology

PRAXAIR SURFACE TECHNOLOGIES
TERMS AND CONDITIONS OF SALE AND FOR ON SITE APPLICATIONS

non-responsive

non-responsive

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Change Management Form: 0084-SOPS-15-0150

Install flow meter on day tank discharge line to PK Blender

ELYRIA - South Operation-Elyria

STATUS: **Approved For StartUp**

1. Definition

Section 1: Change Definition

Section Status: **Complete**

Site *	Unit/Department *	Process Area	Change Number
ELYRIA	**South Operation-Elyria**	**General Catalyst – Building 9**	**0084-SOPS-15-0150**

Change Requestor	Change Coordinator (Project Eng./Mgr.)
Andrea Bal/NA/BASF	**Andrea Bal/NA/BASF**
Type of Change *	Target StartUp Date *
● Permanent ○ Temporary ☐ Emergency?	**12/21/2015**
Capital Project? *	
○ Yes ● No	

Change Title *

Install flow meter on day tank discharge line to PK Blender

Description of Change * (Project Statement -- attach drawing if possible)

Install flow meter on day tank discharge line to PK blender. See preliminary drawing attached. I&E engineer will size out flow meter. Needs to be compatible with nitric and chromic acid. Target flow rate is 35 lb/min or 4 gal/min. Local output and historical trending needed.

Valve Location&LocalOutputArea.JPG Horizontal Piping.JPG PK Blender_P&ID Mark-Up.pdf

Technical Basis or Reason for Change * (Justification)

Provide operators with flow output to assist in preventing pumping chromic acid into PK Blender too quickly, decreasing the risk of end seal and cap leaks. Current practice is to use time and scale which is very difficult to control give valve positions and recycle line.

Submit To Approver *	Copy To
Leon Zavodnik/BASF-CATALYSTS/BASF	**Kirk Sullenberger/BASF-CATALYSTS/BASF**

Submitted by: Andrea Bal on 11/10/2015 09:54 AM

Initiated By: Andrea Bal/NA/BASF on 11/09/2015 10:16 AM

2. ApprovalToProceed

Section 2: Assign Technical Reviewers, Approval to Engineer

Section Status: **Complete**

Customer/Quality Review Needed? ** **N/A**	Customer Notification Status: **Not Applicable**

Confidential Information

Approval / Technical Review? ** ○ Yes ● No

Individual Approval / Review Needed? ** ○ Yes ● No

Unit Change Approver	Copy Additional Personnel
Leon Zavodnik/BASF-CATALYSTS/BASF	**Leon Zavodnik/BASF-CATALYSTS/BASF; Tim Anglin/EB-NAFTA/BASF; Noemi Trent/BASF-CATALYSTS/BASF; Abdallah**
Does this Change have the Unit's Approval to Proceed? **	Comments
Approved by: Leon Zavodnik on 11/11/2015 06:50 AM	**Would like the ability to shut off pump if flow rate is too high**

3. Risk

Section 3: Risk Assessment (Impact on Safety & Health)

Section Status: **Complete**

Meeting / Minutes | Corporate Risk Matrix

Select one or more methods **: ☒ Risk Level Assessment ☐ Mode of Failure ☒ PHA/Step Review/Other

Attach Associated Documents

PK Day Tank Flow Meeting Project Discussion.docx

Risk Assessment

Section I - Degree of Hazard **	
1. ○ Yes ● No	Does the change introduce or substantially affect a significant source of chemical, mechanical, thermal, or electrical energy? Examples: Installation / modification of 100 hp motor Increasing steam supply pressure to a vessel
2. ○ Yes ● No	Does the change result in any increase in inventory of toxic, flammable, or reactive (equivalent to a "4" rating in the NFPA or HMIS systems) materials? If so, is this a new threshold for PSM or RMP (or any relevant regulatory requirements) covered chemicals?
3. ○ Yes ● No	Are established PSM or RMP (worst case scenario) boundaries extended to new piping or equipment?
4. ○ Yes ● No	Will the changed process system contain any materials known or suspected to be thermally, chemically, or physically unstable in quantities or concentrations high enough to cause a hazard?
5. ○ Yes ● No	Does the change significantly increase the potential for personnel exposure to a hazardous material?
6. ○ Yes ● No	Does the change introduce or substantially affect any special or unique hazards that could cause significant negative community impact?
Hazard Rule: ● Low ○ High	

Section II - Significance of Proposed Change **	
1. ○ Yes ● No	Could the change take the process outside previous limits of normal operation (that is, outside the well understood and documented "safe operating envelope") during steady state or transient conditions?
2. ○ Yes ● No	Does the change introduce molecules not already present in the process?
3. ○ Yes ● No	Are PSV's or rupture disks changed, affected, or bypassed?
4. ○ Yes ● No	Does the change re-order or alter the processing sequence and consequently by this alteration introduce a hazard?
5. ○ Yes ● No	Does the change significantly impact the energy balance or mass balance?
6. ○ Yes ● No	Does the change alter, affect, or bypass a safety device or a critical control system or component or are safety instrumented system (SIS) interlocks changed, affected, or bypassed?
7. ○ Yes ● No	Does the change necessitate significant or unique training for operators or technical personnel?
8. ○ Yes ● No	Does the existing system handle reactively incompatible materials in the same equipment during different sequences or campaigns?
Significance Rule: ● **Low** ○ **High**	

RISK LEVEL ASSESSMENT: ● **Level 1** ○ **Level 2** ○ **Level 3** ○ **Level 4**

Reviewers for Impact on Safety & Health**
Andrea Bal/NA/BASF; Nancy Gallagher/NA/BASF

4. Checklist

Section 4: PSSR Checklist & Action Items

Section Status: **Complete**

CHECKLIST NAME	CHECKLIST STATUS
Pre-StartUp	**Complete**
Post-StartUp	**Complete**

Comments

Click on the Refresh button to ensure all action items are updated.

Items To Complete Prior To StartUp

Items May Be Completed After StartUp

Attachments

Batch answer by: Andrea Bal on 11/10/2015 1:29:22 PM (22 Pre-startup items)
Batch answer by: Andrea Bal on 11/10/2015 1:29:59 PM (10 Post-startup items)

5. Training

Section 5: Training Acknowledgement

Section Status: **Complete**

Click on the Refresh button to ensure all action items are updated.

Training needed for affected personnel

13. Inform Personnel of Change(s) by Lotus Notes DB	● Yes ○ No
14. Training with testing or other training means	○ Yes ● No
15. Contractor Employees informed / Trained and/or, BASF Employees not in department. Example, Maintenance employees	○ Yes ● No

StartUp Date / Time : 05/09/2016 07:00 AM

Additional Training Information
Contractors are not affected by this change. Operators will be trained before performing the task. The MOC board will be used for training.

Notified by: Andrea Bal on 8/4/2016 9:34:50 AM
Notified by: Nancy Gallagher on 9/7/2016 2:57:55 PM

Reminder Mail Option is: **Disabled**

- **I have reviewed and understand the change(s) and/or I have been trained on/in the change and the affected procedures/hazards as they apply to my job task**

Personnel Notified	Signoff Date **
Douglas Stock/NA/BASF	4 Aug 2016
Andrew Myers/NA/BASF	4 Aug 2016
Brian Beller/NA/BASF	7 Sep 2016
	4 Aug 2016

6. PSSR

Section 6: PSSR Completion

Section Status: **Working**

Item	Description	Signed By & Date **
A.	Construction and Equipment are in accordance with design specifications. **	Signed YES by Andrea Bal on 5/5/2016
B.	PSSR Long Form(s) required? **	Signed NO by Andrea Bal on 5/5/2016
C.	A field verification walk of all systems has been completed. ** Attachment(s) MOC_Bldg.9Flow Meter_0084-SOPS-15-0150.pdf **Walked down change and discussed. Pumped water through flow meter to check for leaks ensure read output. Cannot calibrate until chromic acid can be used.**	Signed YES by Andrea Bal on 5/5/2016

	Output will be in gal/min and trending will be on wonderware.	

StartUp Date	StartUp Time
05/09/2016	**07:00:00 AM**

Startup Approval Comments: Strtup will be on 5/10/16

No.	Walk-through Description	Complete	Completed By & Date
1	Review and upate PK blender EOP.	Before Start-up	Andrea Bal 5/5/2016
2	Investigate if gauge can be roated to show value hoziontallly.	After Start-up	Andrea Bal 9/15/2016
3	Submit WO to have pipe painted and labeled with flow direction	After Start-up	Andrea Bal 9/15/2016
4	arrow.	After Start-up	
5	Ensure old piping is removed an disposed of.	After Start-up	Andrea Bal 9/15/2016
	Contact Elliot to calibrate flow meter with chromic acid flowing.		

PSSR Date (**This field is required if Question B above is answered 'Yes')	PSSR Team Members (**This field is required if Question B above is answered 'Yes')	PSSR Team Members (not in DB)
05/05/2016		

7. StartupApproval

Section 7: Approval to StartUp

Section Status: **Complete**

StartUp Date / Time : 05/09/2016 07:00 AM

Approvals are required before StartUp according to site procedures.

Approver	Approved By
EHS	
TES	
Maintenance	
Construction	
Operations	
Other	
Other	
Unit Final Approver ** **Leon Zavodnik/BASF-CATALYSTS/BASF**	Leon Zavodnik on 05/10/2016

Approvers Notified by:
Andrea Bal on 5/5/2016 2:14:32 PM

8. Temporary

Section 8: Temporary Change Management - Not Applicable

9. Change Close Out

Section 9: Change Close Out

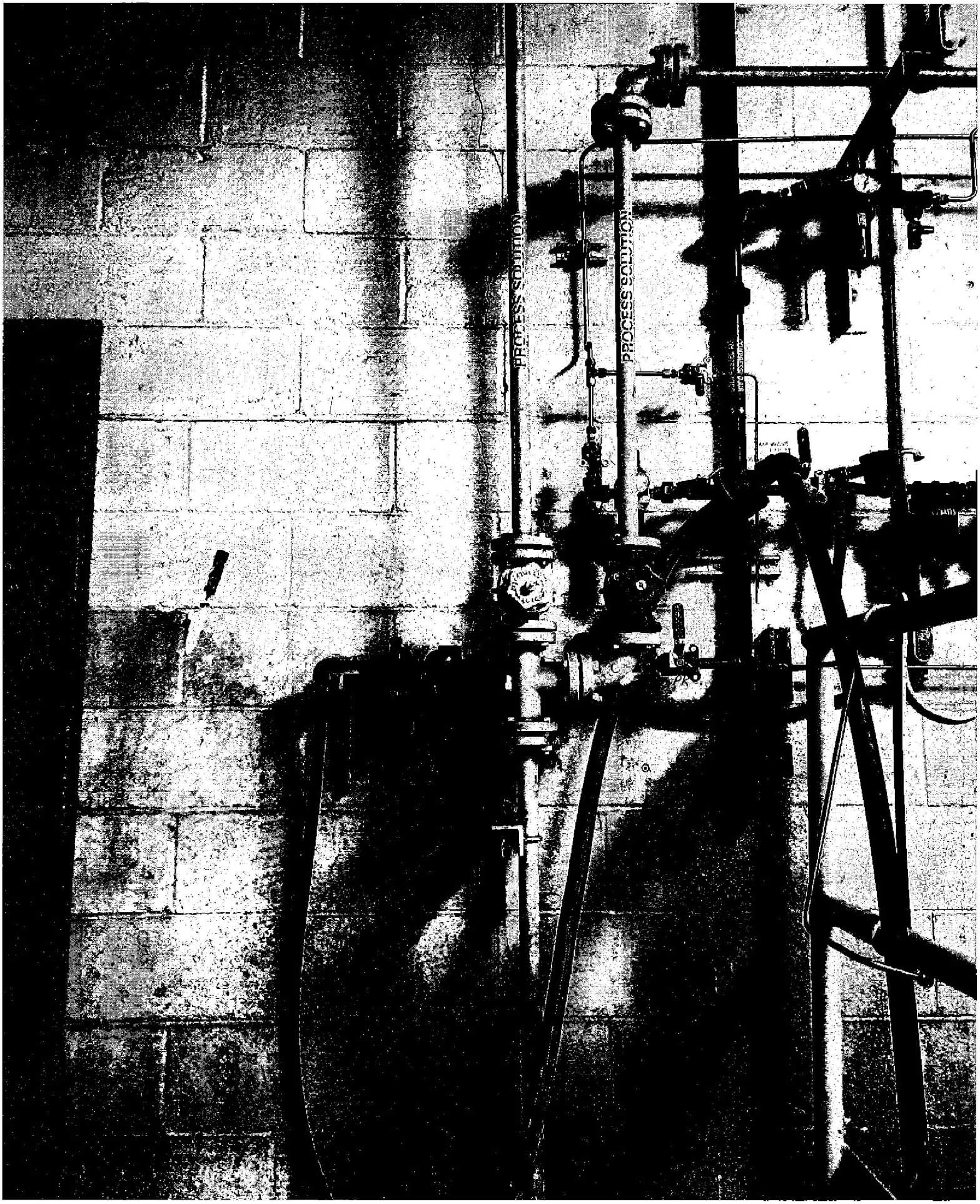
Section 1: Change Definition	**Complete**
Section 2: Assign Technical Reviewers, Approval to Proceed	**Complete**
Section 3: Risk Assessment (Impact on Safety and Health)	**Complete**
Section 4: PSSR Checklist and Action Items	**Complete**
Section 5: Training Acknowledgement	**Complete**
Section 6: PSSR Completion	**Working**
Section 7: Approval to StartUp	**Complete**
Section 8: Temporary Change Management	**Not Applicable**

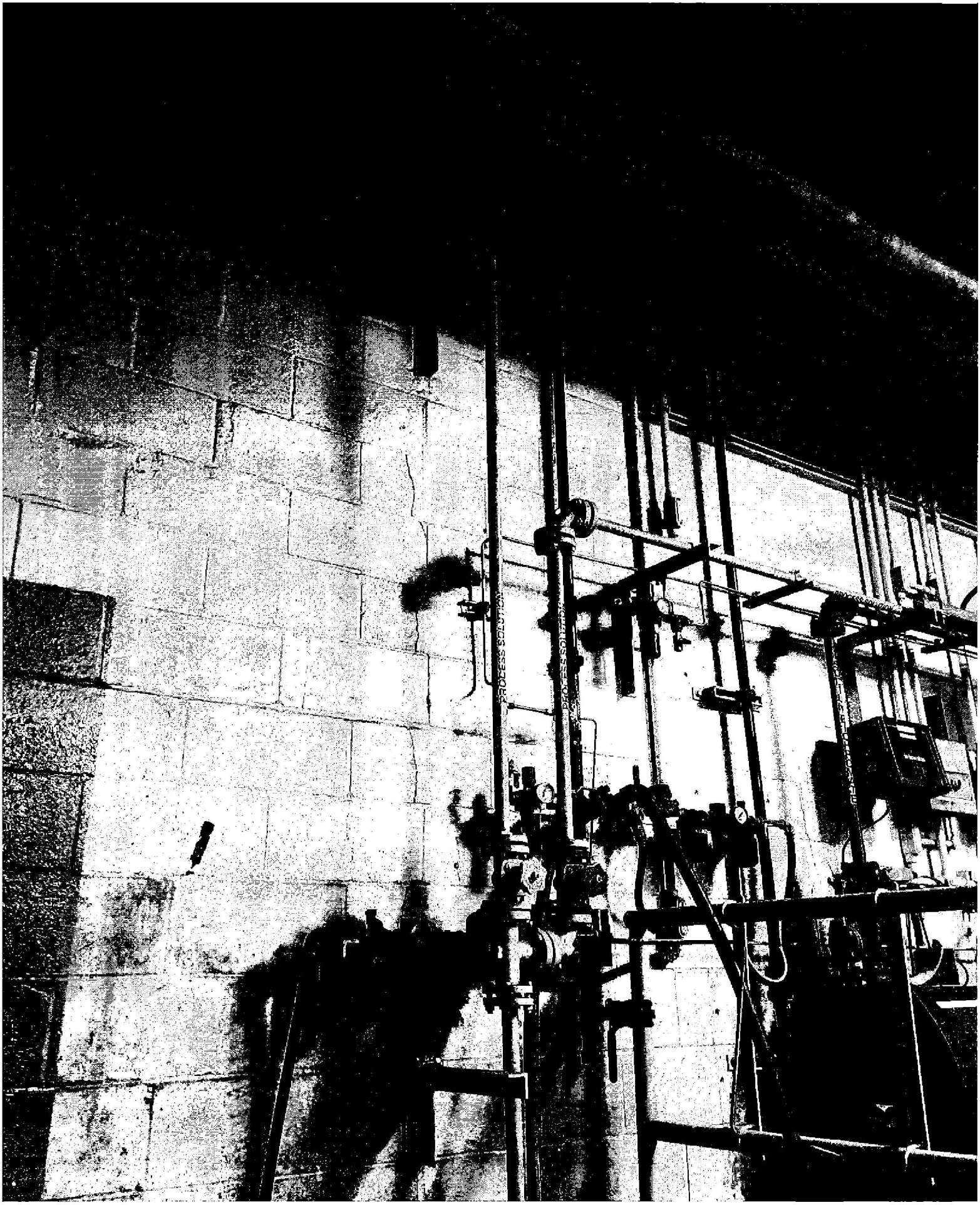
Comments:

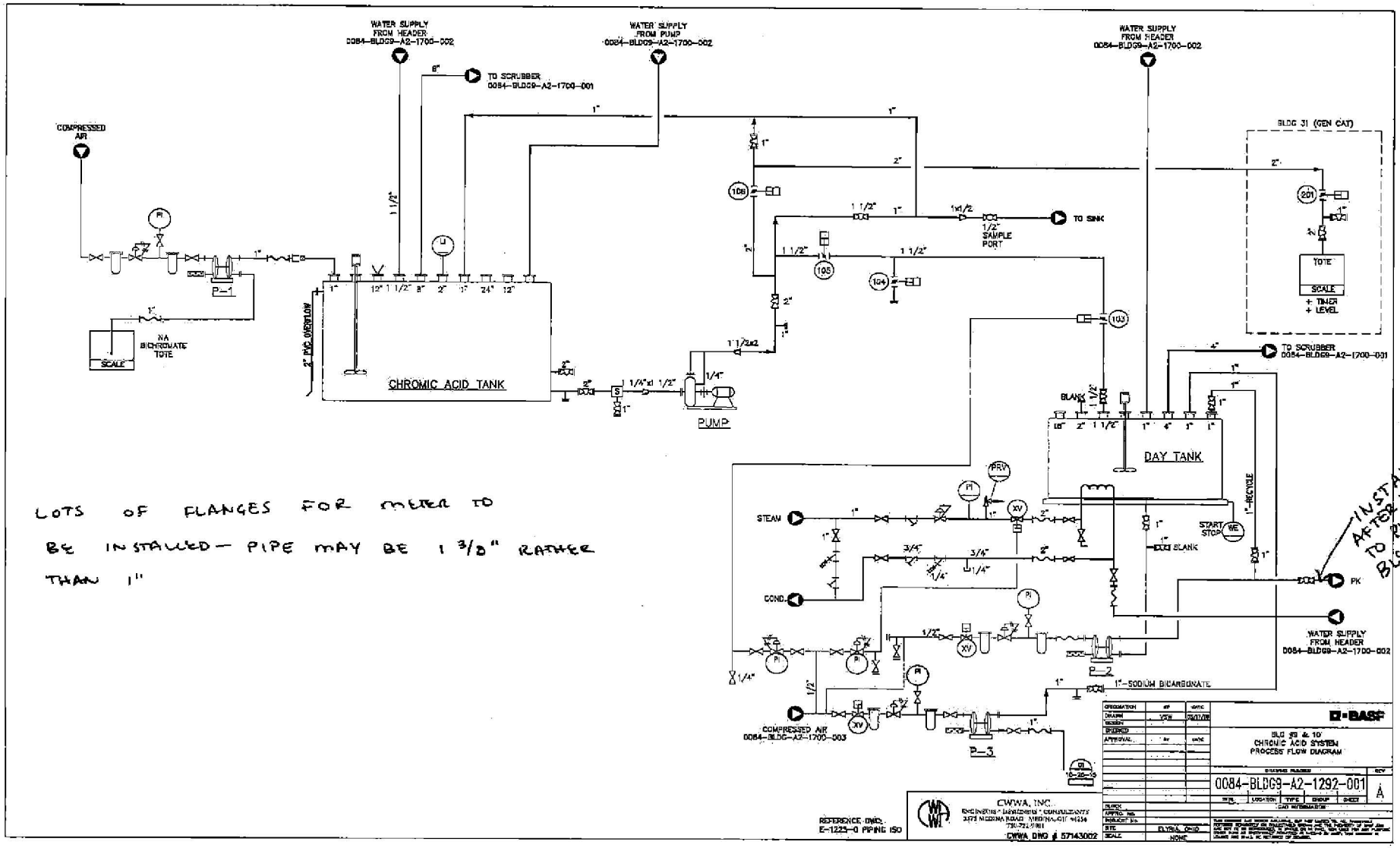
EditHistory

Edit History

Editor	Date & Time
Andrea Bal	09/15/2016 04:36 PM
Brian Beller	09/07/2016 11:02 PM
Nancy Gallagher	09/07/2016 02:58 PM
Andrew Myers	08/04/2016 10:59 PM
Terrence M Vanderbosch	08/04/2016 04:06 PM
Douglas Stock	08/04/2016 09:58 AM
Andrea Bal	08/04/2016 09:35 AM
Leon Zavodnik	05/10/2016 02:32 PM
Andrea Bal	05/05/2016 02:14 PM
Andrea Bal	05/05/2016 02:14 PM
Andrea Bal	05/05/2016 02:13 PM
Leon Zavodnik	11/11/2015 06:50 AM
Andrea Bal	11/10/2015 01:32 PM
Andrea Bal	11/10/2015 01:30 PM
Andrea Bal	11/10/2015 09:56 AM


PROCESS SOLUTION
PROCESS SOLUTION




WATER SUPPLY FROM HEADER 0084-BLDG9-A2-1700-002
WATER SUPPLY FROM PUMP 0084-BLDG9-A2-1700-002
WATER SUPPLY FROM HEADER 0084-BLDG9-A2-1700-002
TO SCRUBBER 0084-BLDG9-A2-1700-001
COMPRESSED AIR
P-1
NA BICHROMATE TOTE
SCALE
CHROMIC ACID TANK
2" PVC OVERFLOW
PUMP
TO SINK
1/2" SAMPLE PORT
BLDG 31 (GEN CAT)
TOTE
SCALE
+ TIMER
+ LEVEL
TO SCRUBBER 0084-BLDG9-A2-1700-001
BLANK
DAY TANK
STEAM
COND.
PRV
PI
TI
XV
START STOP
WE
1"-RECYCLE
PK
INSTALL AFTER VALVE TO PK BLENDER
WATER SUPPLY FROM HEADER 0084-BLDG9-A2-1700-002
P-2
1"-SODIUM BICARBONATE
COMPRESSED AIR 0084-BLDG-A2-1700-003
P-3
LOTS OF FLANGES FOR METER TO BE INSTALLED — PIPE MAY BE 1 3/8" RATHER THAN 1"
BASF
BLG #9 & 10
CHROMIC ACID SYSTEM
PROCESS FLOW DIAGRAM
0084-BLDG9-A2-1292-001
A
CWWA, INC.
ENGINEERS • LANDSCAPE • CONSULTANTS
3573 MEDINA ROAD, MEDINA, OH 44256
330-725-9788
CWWA DWG # 57143002
REFERENCE DWG.
E-1225-0 PIPING ISO
ELYRIA, OHIO
NONE

Accident / Incident Report Closed

Unit/Department	Process Area	Site	Report Number
South Operation-Elyria		**ELYRIA**	**0084-SOPS-15-0148**
Report Date	Incident Date	Incident Time	Copied From
10/14/2015	**09/30/2015**	**03:00 PM**	
Incident Location		Team Leader / Supervisor	Reported By
Elyria Plant		**Leon Zavodnik**	**Tim Anglin**
Title of Event (Limit to 90 characters)		Category	Division / Bus. Group / Subgroup Code
September 2015 Non TriMer Title V Deviations		☐ Safety & Health ☐ Environmental	**CC / G-CCP**

Incident Classification

☐ Near Miss	☐ Property Loss	☐ Contractor
☐ Process Safety	☐ Citation / NOV	☐ Contractor Injury / Illness
☐ Injury / Illness	☐ Health Exposure	☐ Contract Injury / Illness
☐ Spill / Release	☐ Inspection	☐ PSM
☒ Permit / Regulatory Deviation	☐ Major Incident	☐ Plant Upset
☐ Fire	☐ Non-Occupational	☐ EHS Management System Failure
☐ Odor Complaint	☐ RMP	☐ Other

Describe Event / What Happened

Three Deviations related to the pressure drop for the scrubber on the PK blender.

Immediate Corrective Action or Response

PK Blender scrubber repaired

Immediate Cause

PK Scrubber

Cause Narrative

A new CRT was taking readings and improperly marked down the incorrect readings. There is currently no backup on the system to collect the data

Contributing Causes	Root/Primary Causes		
The employee misread the numbers on the gauge and wrote them down improperly	163 - Training	170 - Training LTA	175 - On-the-Job Training LTA
There is no back up documentation that can be used in the event of a missed reading	55 - Administrative/Management Systems	72 - Safety/Hazard/Risk Review	76 - Risk Acceptance Criteria LTA

Any known or potential off-site impacts?	No	PSM Incident?	No	Estimated Cost:	4,000.00 USD
Investigation Team	Leon Zavodnik				

Item	Corrective Action(s) to prevent recurrence	Responsible Person	Target Date	Final Closed Date	VC Req	VE Req
1	Add pressure drop for scrubber in building 9 on the network so it can be retrieved if needed (a minimum of 2 inches of water is required)	Kirk Sullenberger/BASF-CATALYSTS/BASF	03/26/2016	10/27/2015	N	N

Approved By:

Manager / Dept. Head **Leon Zavodnik 10/26/2015 11:26 AM**

EHS Unit Coordinator **Tim Anglin 10/29/2015 02:49 PM**

Safety & I.H.	Valerie Douglas	10/27/2015 01:49 PM
	Confidential	

Main WorkCtr	Notification	Priority	Description	Functional Loc.	Created on
MECH	934676105	2	Pk Blender tote pump station wand	UTEL-CAT-BDG9-M-R-58702007	01/09/2015
MECH	934678600	2	PK discharge valve rheostat switch broke	UTEL-CAT-BDG9-M-R-58712001	01/10/2015
MECH	934702416	1	PK scrubber pressure drop needs help	UTEL-CAT-BDG9-M-S-58708001	01/19/2015
CONTROLS	934717889	3	Calibrate and clean Pk Scubber flowmeter	UTEL-CAT-BDG9-I-D-58735103	01/26/2015
OPER	934755766	2	SJN - Pk Blender top hatch rework	UTEL-CAT-BDG9-M-R-58712001	02/06/2015
MECH	934755639	2	The PK Blender Lining needs repaired	UTEL-CAT-BDG9-M-R-58712001	02/06/2015
MECH	934770762	4	PK Blender outlet valve controls/display	UTEL-CAT-BDG9-M-R-58712001	02/12/2015
CONTROLS	934793505	3	Calibrate and clean Pk Scubber flowmeter	UTEL-CAT-BDG9-I-D-58735103	02/23/2015
OPER	934812469	2	SJN - Safety- Retaining ring - PK Lid	UTEL-CAT-BDG9-M-R-58712001	03/02/2015
MECH	934837721	1	PK blender discharge valve	UTEL-CAT-BDG9-C-B-58735100	03/13/2015
MECH	934848500	1	Discharge valve tote pump for PK	UTEL-CAT-BDG9-M-R-58702007	03/18/2015
MECH	934850260	3	add solenoid valves for PK blenders	UTEL-CAT-BDG9-M-R-58712001	03/18/2015
CONTROLS	934859800	3	Calibrate and clean Pk Scubber flowmeter	UTEL-CAT-BDG9-I-D-58735103	03/23/2015
MECH	934896646	3	Install indacator light for PK DC drum	UTEL-CAT-BDG9-C-B-58735100	04/08/2015
MECH	934899850	2	Replace actuator on pk blender	UTEL-CAT-BDG9-M-R-58712001	04/09/2015
MECH	934902172	2	PK Discharge valve controller	UTEL-CAT-BDG9-M-R-58712001	04/10/2015
MECH	934920850	1	pk hoses torn off	UTEL-CAT-BDG9-C-B-58735100	04/19/2015
MECH	934934263	1	4.23.15 PK Blender building 9 - auto val	UTEL-CAT-BDG9-C-B-58735100	04/24/2015
MECH	934936034	1	PK Blender air pump from weigh tank	UTEL-CAT-BDG9-M-R-58702003	04/25/2015
CONTROLS	934939548	3	Calibrate and clean Pk Scubber flowmeter	UTEL-CAT-BDG9-I-D-58735103	04/27/2015
MECH	934941710	1	PK Blender air pump from weigh tank	UTEL-CAT-BDG9-M-R-58702003	04/27/2015
MECH	934942334	1	PK Discharge valve issues.	UTEL-CAT-BDG9-M-R-58712001	04/27/2015
MECH	934943775	1	pk solution pump leaking	UTEL-CAT-BDG9-M-R-58702003	04/28/2015
MECH	934945087	2	Adjust South PK Valve	UTEL-CAT-BDG9-M-R-58712001	04/28/2015
MECH	934953071	1	PK outlet valve actuator loose	UTEL-CAT-BDG9-M-R-58712001	05/02/2015
MECH	934956244	1	pk discharge valve stuck closed now	UTEL-CAT-BDG9-C-B-58735100	05/04/2015
MECH	934956517	1	PK outlet valve controller	UTEL-CAT-BDG9-M-R-58712001	05/04/2015
MECH	934963704	1	chrome tote pump/PK blender	UTEL-CAT-BDG9-M-R-58702003	05/07/2015
MECH	934963759	1	Pk blender motor making a whining sound	UTEL-CAT-BDG9-C-B-58735100	05/07/2015
MECH	934969776	1	PK Blender both end seals leaking	UTEL-CAT-BDG9-M-R-58712001	05/11/2015
MECH	934973981	1	Discharge valve not working PK	UTEL-CAT-BDG9-M-R-58712001	05/11/2015
MECH	934976084	1	pk solution line leaking	UTEL-CAT-BDG9-M-R-58712001	05/12/2015
MECH	934976176	1	PK west end seal leaking bad	UTEL-CAT-BDG9-M-R-58712001	05/13/2015
MECH	934977806	2	Building 9, PK Blender, rewire on/off sw	UTEL-CAT-BDG9-C-B-58735100	05/13/2015
MECH	934978891	1	PK blender west end seal leaking	UTEL-CAT-BDG9-C-B-58735100	05/14/2015
MECH	934991462	1	PK blender Chrome line to weigh tank	UTEL-CAT-BDG9-C-B-58735100	05/19/2015
MECH	934998276	1	PK Blender outlet valve	UTEL-CAT-BDG9-M-R-58712001	05/23/2015
MECH	935017605	1	end seals on pk blender	UTEL-CAT-BDG9-C-B-58735100	05/31/2015
MECH	935028737	1	PK Blender Discharge valve not working	UTEL-CAT-BDG9-M-R-58712001	06/05/2015

MECH	935043040	1	pk day tank solution valve from	UTEL-CAT-BDG9-M-V-58701002	06/11/2015
MECH	935045475	1	PK Blender Transfer pump to PK leaking	UTEL-CAT-BDG9-M-R-58702003	06/12/2015
MECH	935088300	2	Pump to PK blender install new valving	UTEL-CAT-BDG9-C-B-58735100	06/28/2015
CONTROLS	935156769	3	Calibrate and clean Pk Scubber flowmeter	UTEL-CAT-BDG9-I-D-58735103	07/27/2015
MECH	935178174	1	PK Discharge valve leaking	UTEL-CAT-BDG9-C-B-58735100	08/05/2015
MECH	935228317	1	Pk blender cap	UTEL-CAT-BDG9-M-R-58712001	08/27/2015
PIPE	935243837	1	leak underneath weigh tank/PK	UTEL-CAT-BDG9-M-V-58701001	09/02/2015
MECH	935261769	1	PK blender east end seal	UTEL-CAT-BDG9-M-R-58712001	09/10/2015
MECH	935265950	1	need pk solution pump replaced	UTEL-CAT-BDG9-M-R-58702003	09/12/2015
MECH	935267409	1	PK blender solution pump	UTEL-CAT-BDG9-M-R-58702003	09/14/2015
MECH	935278099	1	Put new shower caps on PK Blender	UTEL-CAT-BDG9-M-R-58712001	09/17/2015
MECH	935279158	1	replace PK solution pump	UTEL-CAT-BDG9-M-R-58702007	09/18/2015
MECH	935280579	1	South PK Blender Discharge Valve Leaking	UTEL-CAT-BDG9-M-R-58712001	09/18/2015

Action Item: 0084-SOPS-15-0165

Complete

BASF
The Chemical Company

Initiated By: Leon Zavodnik/BASF-CATALYSTS/BASF on 04/02/2015 02:28 PM

Section I: Action Item Definition

Section Status: Complete

Site *	Unit/Department *	Item Number
ELYRIA	South Operation-Elyria	0084-SOPS-15-0165
Action Item Type *	Process Area	
Accident / Incident	General Catalyst – Building 9	

Description of Action Item *

Modify PK blender Operating procedure and batch sheets once new valve is installed

Responsible Person *	Target Date *	Complete Date
John Bodmann/BASF-CATALYSTS/BASF	09/02/2015	09/02/2015
Person Changed By	Target Date History:	Completed By:
		John Bodmann
Is Action Plan Required?	Copy the following people with the action item notice	Reminder Mail (Site Setup)
No		Option is **Enabled** Days Before Due Date: **7** Interval Period After Due Date: **Weekly**
Is Verification of Completeness Required?	Is Verification of Effectiveness Required?	Division / Bus. Group / Subgroup Code
No	No	CC / G-CCP

Status Comments or Final Resolution **

Batch sheets and operating procedure have been modified.

Responsible Person notified by Leon Zavodnik on 04/02/2015 02:28:05 PM

Source Key	Source Form (with link back to source document)	Source Item Number
0084-SOPS-15-0029	AIM	3

Section Ia: Verify Completeness

Section Status: Not Applicable

Section Ib: Verify Effectiveness

Section II: Action Plan

Section Status: Not Applicable

Section III: Edit History

Accident / Incident Report Closed

BASF We create chemistry

Unit/Department	Process Area	Site	Report Number
South Operation-Elyria	General Catalyst – Building 9	ELYRIA	0084-SOPS-15-0121
Report Date	Incident Date	Incident Time	Copied From
08/27/2015	08/26/2015	12:30 PM	
Incident Location		Team Leader / Supervisor	Reported By
PK blender		Terrence M Vanderbosch	Eugene Mason
Title of Event (Limit to 90 characters)		Category	Division / Bus. Group / Subgroup Code
PK blender vented during the production of a batch of Catoxid.		☐ Safety & Health ☐ Environmental	CC / G-CCP

Incident Classification

☐ Near Miss	☐ Property Loss	☐ Contractor
☐ Process Safety	☐ Citation / NOV	☐ Contractor Injury / Illness
☐ Injury / Illness	☐ Health Exposure	☐ Contract Injury / Illness
☒ Spill / Release	☐ Inspection	☐ PSM
☐ Permit / Regulatory Deviation	☐ Major Incident	☐ Plant Upset
☐ Fire	☐ Non-Occupational	☐ EHS Management System Failure
☐ Odor Complaint	☐ RMP	☐ Other

Describe Event / What Happened

An operator was making a batch of Catoxid. While pumping in the solution the blender began to vent out of the West manhole sock cover.

Immediate Corrective Action or Response

Operator stopped making batches and notified supervisor.

Immediate Cause

Maintenance mechanic indicated that there was a bad seal on the lid of the cover for the blender opening.

Spill Release Type(s)	Non RQ Spill / Release						
Chemical(s) Involved	CAS #	Phy. State	Air	Land	Water	Contmt	Units
Oxyvinyls Catoxid 5	1344-28-1	Liquid	0	0	0	1	lbs
Disposition of Material	Materials washed down to WWTP						
Weather Conditions	Skies:	Temperature:		Wind Direction:		Wind Speed:	

Cause Narrative

Bad gasket on manhole cover caused a leak out of blender. It's likely that solution may be pumping in too fast causing the blender to build some pressure

Contributing Causes	Root/Primary Causes		
It is difficult to control the flow of solution to the blender correctly due to inadequate controls	15 - Design Input/Output	16 - Design Input LTA	16 - Design Input LTA
Procedure does not cover all requirements (change of shower cap filter, change of gaskets, etc)	111 - Procedures	130 - Wrong/Incomplete	136 - Incomplete/Situation Not Covered

Any known or potential off-site impacts?	No	PSM Incident?	No	Estimated Cost:	5,000.00 USD
Investigation Team	Andrew Myers; Greg Hebb; Andrea Bal; Kristen Kaput; Terrence M Vanderbosch; Leon Zavodnik				

Item	Corrective Action(s) to prevent recurrence	Responsible Person	Target Date	Final Closed Date	VC Req	VE Req

1	Determine what changes are needed to better control solution addition to blender. Consider weigh cell to wonderware on tank and modifying way solution is added to better control flow to blender.	Andrea Bal/NA/BASF	02/14/2016	02/09/2016	N	N
2	Modify procedure to account for gasket and shower cap filters going into a production run of catoxid	Andrea Bal/NA/BASF	11/13/2015	10/08/2015	N	N
3	Train operators on revised procedure	Terrence M Vanderbosch/BASF-CATALYSTS/BASF	11/30/2015	11/10/2015	N	N

Approved By:	
Manager / Dept. Head	**Leon Zavodnik 09/14/2015 12:25 PM**
EHS Unit Coordinator	**Valerie Topete 09/16/2015 08:48 AM**
	Confidential

Accident / Incident Report Closed

Unit/Department	Process Area	Site	Report Number
South Operation-Elyria	General Catalyst – Building 9	ELYRIA	0084-SOPS-15-0057
Report Date	Incident Date	Incident Time	Copied From
05/06/2015	05/05/2015	09:00 PM	
Incident Location		Team Leader / Supervisor	Reported By
Building #9 at the PK Blender discharge station		Brian Beller	non-responsive
Title of Event (Limit to 90 characters)		Category	Division / Bus. Group / Subgroup Code
Operator was exposed to chrome/aluminum dust while unloading the PK Blender		☐ Safety & Health ☐ Environmental	CC / G-CCP

Incident Classification

☐ Near Miss	☐ Property Loss	☐ Contractor
☐ Process Safety	☐ Citation / NOV	☐ Contractor Injury / Illness
☐ Injury / Illness	☒ Health Exposure	☐ Contract Injury / Illness
☐ Spill / Release	☐ Inspection	☐ PSM
☐ Permit / Regulatory Deviation	☐ Major Incident	☐ Plant Upset
☐ Fire	☐ Non-Occupational	☐ EHS Management System Failure
☐ Odor Complaint	☐ RMP	☐ Other

Describe Event / What Happened

While operating the PK blender in Building #9, the operator was discharging the blender into a sack and was exposed to Oxyvinyls Catoxid 5 impregnation. He was attempting to lift up the neck of the bag in order to clear out a powder build up in the discharge chute, and had the clamp for the neck off. When he let go of the neck a puff of material came out of the bag coating his PAPR and the exposed side of his face as well as the upper part of his Tyvek suit. He called his floor CRT to come and take a look and then vacuumed off and showered. Later in the night the operator noticed that the areas of his neck that had been exposed broke out in a rash which went away overnight.

Immediate Corrective Action or Response

Reattached the bag neck and cleaned up exposed skin and PAPR.

Immediate Cause

Accidental overfilling of Sack caused unnecessary exposure

Cause Narrative

Operator overfilled the bag that he was unloading into due to discharge valve not fully closing.

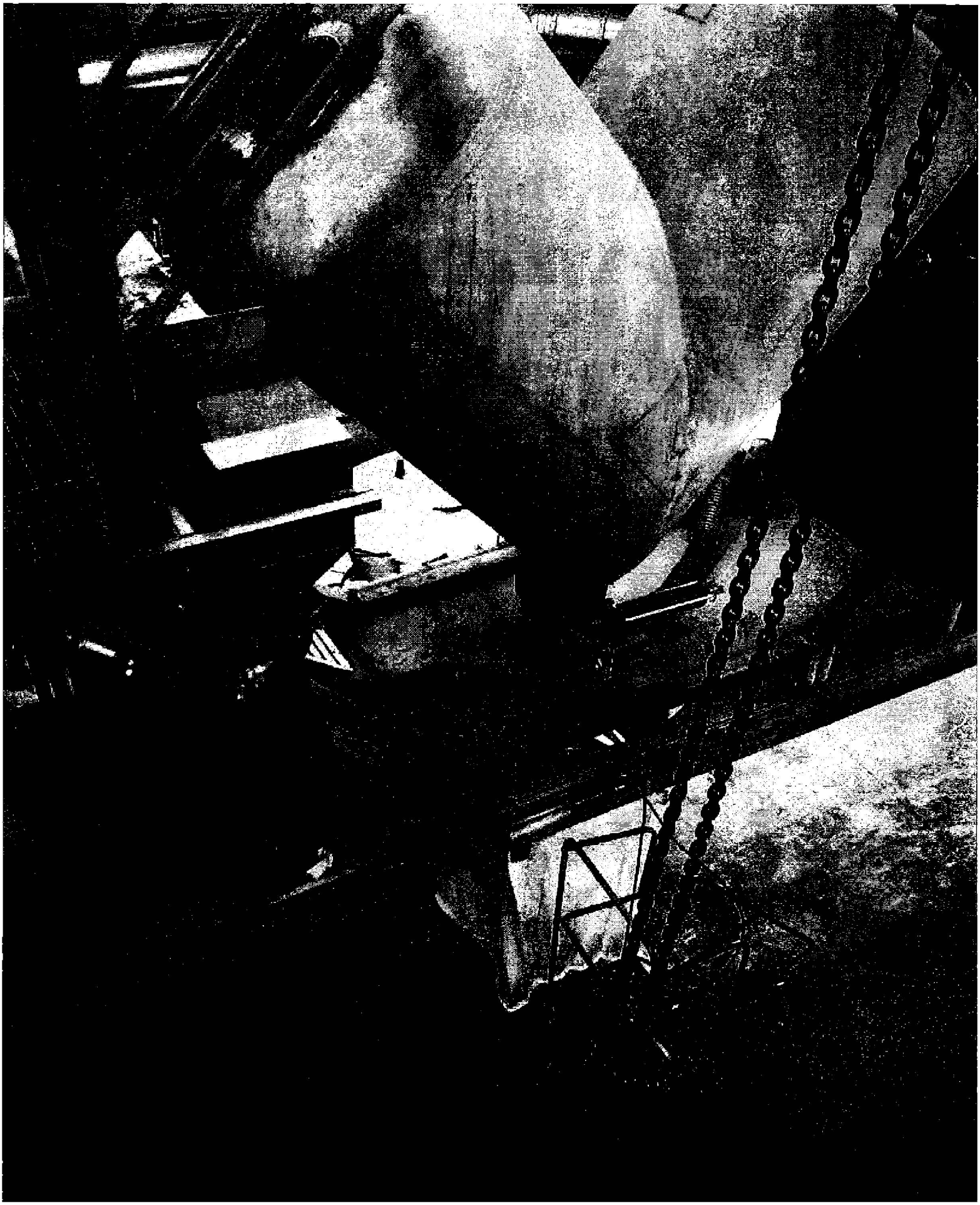
Contributing Causes	Root/Primary Causes		
Discharge valve did not close properly causing material to leak from the blender.	138 - Human Factors Engineering	160 - Intolerant System	161 - Errors Not Detectable
Operator exposed himself to chemicals by removing an exposure safety system, because of an acidental over filling of his bag.	163 - Training	170 - Training LTA	179 - Abnormal Events/Emergency Training LTA

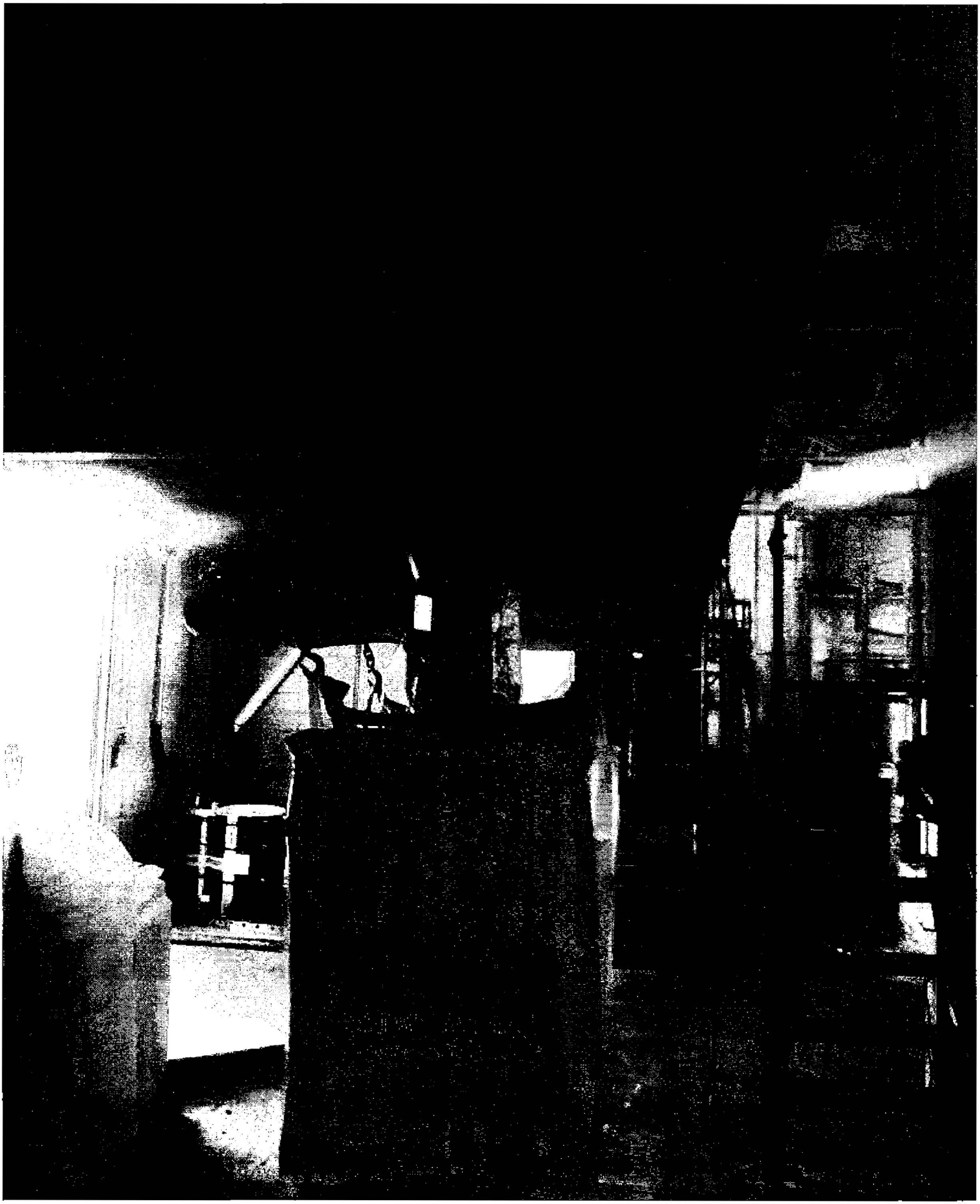
Any known or potential off-site impacts?	No	PSM Incident?	No	Estimated Cost:	1,000.00 USD
Investigation Team	William Grodecki; John E Peshek; John Bodmann; Andrea Bal; Brian Beller				

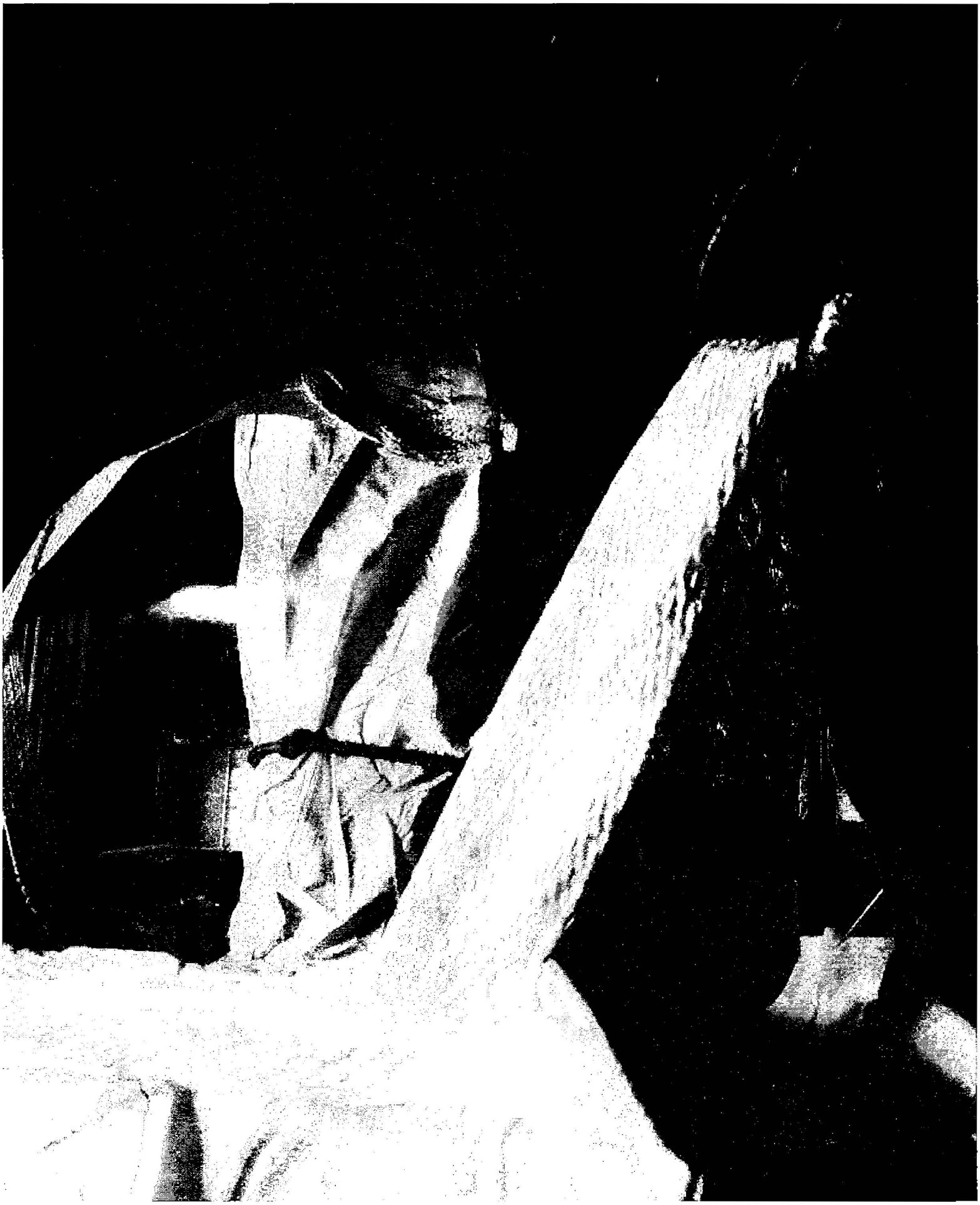
Item	Corrective Action(s) to prevent recurrence	Responsible Person	Target Date	Final Closed Date	VC Req	VE Req
1	Replace discharge valve of PK blender.	John Bodmann/BASF-CATALYSTS/BASF	09/30/2015	09/28/2015	N	N
2	Review process safety for abnormal process events and emergencies in upcoming safety meeting.	John E Peshek/NA/BASF	09/30/2015	09/25/2015	N	N

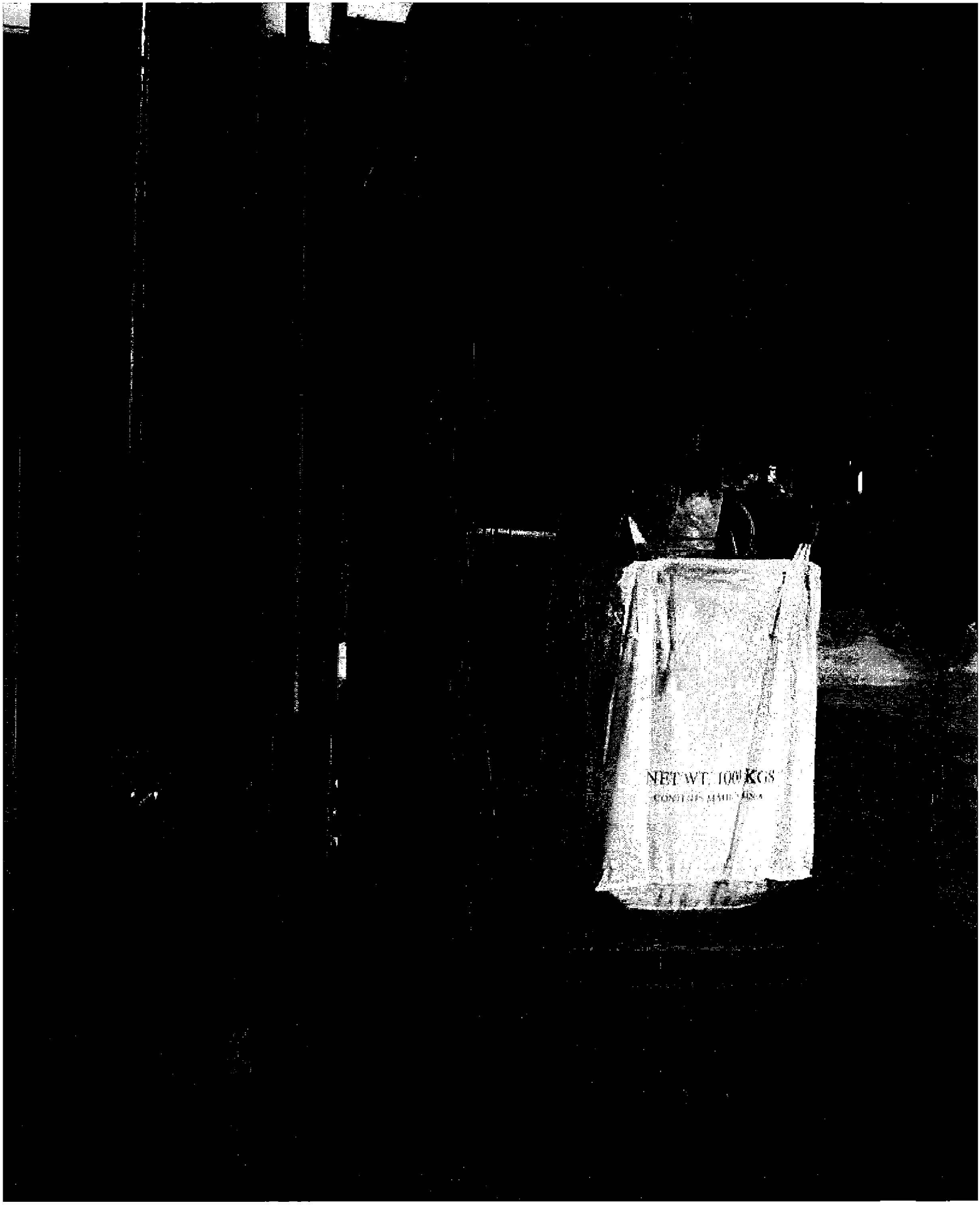
3	Determine a better way to unload bag to prevent overfill	Robert Urig/BASF-CATALYSTS/BASF	09/23/2015	06/30/2015	N	N

Approved By:	
Manager / Dept. Head	**Leon Zavodnik 05/23/2015 01:52 AM**
EHS Unit Coordinator	**Valerie Topete 05/22/2015 11:29 AM**
	Confidential





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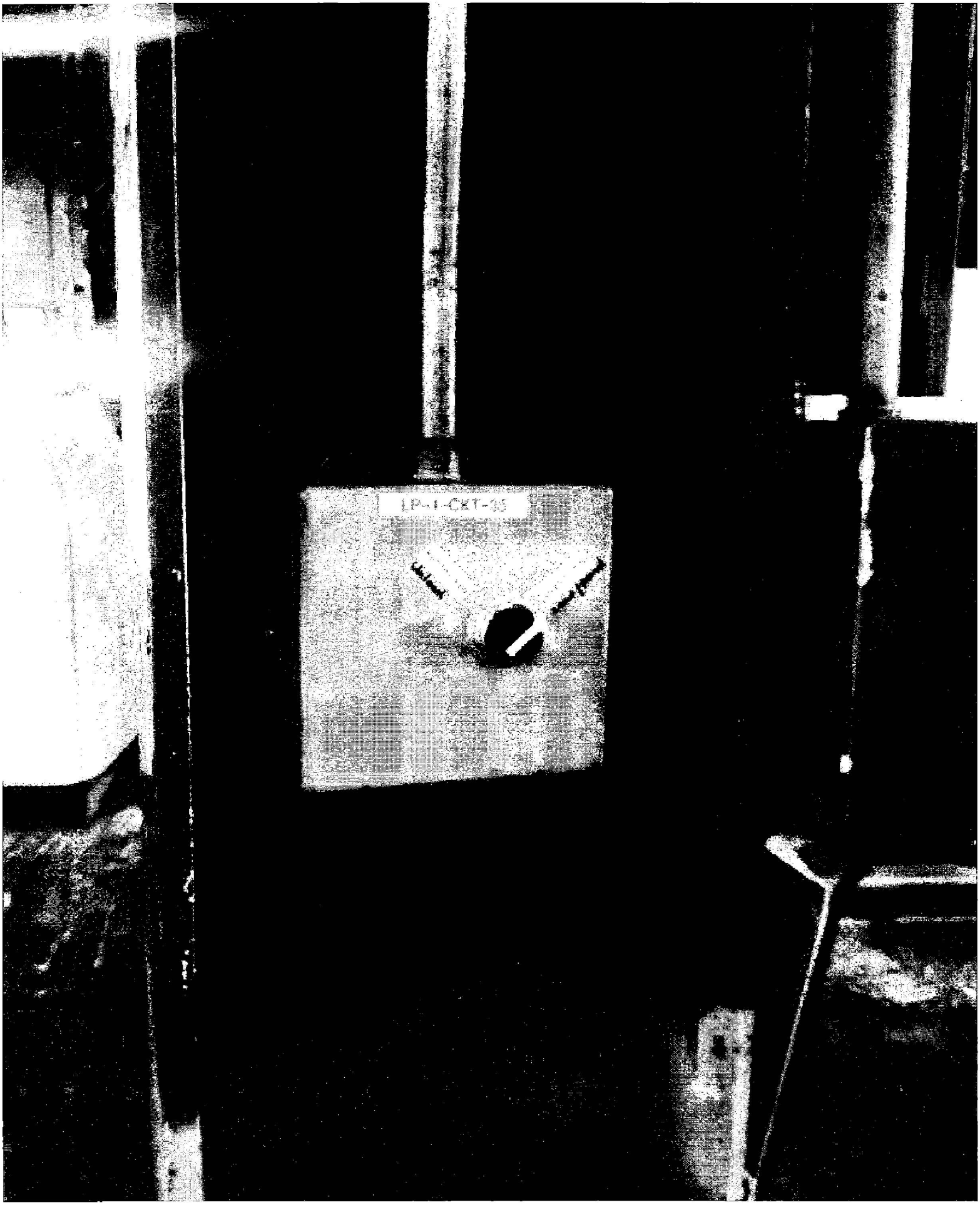
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Accident / Incident Report Closed

Unit/Department	Process Area	Site	Report Number
South Operation-Elyria	**General Catalyst – Building 9**	**ELYRIA**	**0084-SOPS-15-0029**
Report Date	Incident Date	Incident Time	Copied From
03/16/2015	**03/12/2015**	**08:00 PM**	
Incident Location		Team Leader / Supervisor	Reported By
Building 9		**Robert Scoggins**	**Robert Scoggins**
Title of Event (Limit to 90 characters)		Category	Division / Bus. Group / Subgroup Code
PK Blender outlet valve would not close completely		☐ Safety & Health ☐ Environmental	**CC / G-CCP**

Incident Classification

☐ Near Miss	☐ Property Loss	☐ Contractor
☐ Process Safety	☐ Citation / NOV	☐ Contractor Injury / Illness
☐ Injury / Illness	☐ Health Exposure	☐ Contract Injury / Illness
☒ Spill / Release	☐ Inspection	☐ PSM
☐ Permit / Regulatory Deviation	☐ Major Incident	☐ Plant Upset
☐ Fire	☐ Non-Occupational	☐ EHS Management System Failure
☐ Odor Complaint	☐ RMP	☐ Other

Describe Event / What Happened

On Thursday March 12 2014, the PK blender operator was in the process of unloading a batch of pill mix. After the first bag was filled, the operator noticed that the blender outlet valve position indicator was still approximately 10% open.

Immediate Corrective Action or Response

The operator contacted the floor CRT and the two proceeded to quickly change out the full bag, and install a second bag under the blender outlet. The balance of the pill mix in the blender was emptied into the send bag, with approximately 20-30 lbs of pill mix powder spilling to the floor. After emptying the blender, the operator, CRT and GL went to the 2nd floor and opened the blender to inspect the inside of the vessel. It was thought that perhaps an obstruction within the blender was not allowing the outlet valve to fully close, but no foreign material was found in the blender. The blender was then shut down for the balance of the day/evening; the floor and building were both cleaned up for maintenance and/or engineers to evaluate the issue with the blender valve.

Immediate Cause

Unknown...to be investigated

Spill Release Type(s)	**Non RQ Spill / Release**

Chemical(s) Involved	CAS #	Phy. State	Air	Land	Water	Contmt	Units
AL-3917	N/A	Solid	0	25	0	0	lbs

Disposition of Material	**Cleaned up**

Weather Conditions	Skies:	Temperature:	Wind Direction:	Wind Speed:

Cause Narrative

Operators were not properly trained on how new shut off valve was set up on the blender. The operators were turning the air valve off and not allowing the valve to completely close.

Contributing Causes	Root/Primary Causes		
Training was incomplete and there was no documentation on the change	163 - Training	170 - Training LTA	175 - On-the-Job Training LTA
Valve does not fully close when air is turned off.	15 - Design Input/Output	16 - Design Input LTA	16 - Design Input LTA

Explanation of Root Causes

175 - A new solenoid was installed however this information wa snot clear to all of the operators. Once it was reviewed with operators it worked well.

16 - This application needs a fail closed valve to ensure it cannot be opened by residual air in system

Any known or potential off-site impacts?	No	PSM Incident?	No	Estimated Cost:	5,000.00 USD
Investigation Team	Leon Zavodnik; Brian Beller; Terrence M Vanderbosch				

Item	Corrective Action(s) to prevent recurrence	Responsible Person	Target Date	Final Closed Date	VC Req	VE Req
1	Replace valve with fail close type valve to ensure loss of power will have valve close	Kirk Sullenberger/BASF-CATALYSTS/BASF	09/30/2015	05/15/2015	N	N
2	Label current panel with proper shutoff procedure until new valve is installed	Brian Beller/NA/BASF	06/02/2015	04/23/2015	N	N
3	Modify PK blender Operating procedure and batch sheets once new valve is installed	John Bodmann/BASF-CATALYSTS/BASF	09/02/2015	09/02/2015	N	N
4	Modify PK batch sheets to account for new PK valve on your products	Justin Quach/NA/BASF	09/02/2015	09/02/2015	N	N
5	Train operators on new valve operation	Robert Scoggins/NA/BASF	09/30/2015	09/28/2015	N	N

Approved By:	
Manager / Dept. Head	**Leon Zavodnik 04/06/2015 02:43 PM**
EHS Unit Coordinator	**Dean R Gadoury 04/06/2015 03:33 PM**
	Confidential

Accident / Incident Report Closed

Unit/Department	Process Area	Site	Report Number
South Operation-Elyria		ELYRIA	0084-SOPS-15-0014
Report Date	Incident Date	Incident Time	Copied From
02/03/2015	02/03/2015	12:40 AM	
Incident Location		Team Leader / Supervisor	Reported By
Building 9		Terrence M Vanderbosch	Alexander Donald
Title of Event (Limit to 90 characters)		Category	Division / Bus. Group / Subgroup Code
PK blender lid pressurized and came off.		☐ Safety & Health ☐ Environmental	CC / G-CCP

Incident Classification

☒ Near Miss	☐ Property Loss	☐ Contractor
☐ Process Safety	☐ Citation / NOV	☐ Contractor Injury / Illness
☐ Injury / Illness	☐ Health Exposure	☐ Contract Injury / Illness
☒ Spill / Release	☐ Inspection	☐ PSM
☐ Permit / Regulatory Deviation	☐ Major Incident	☐ Plant Upset
☐ Fire	☐ Non-Occupational	☐ EHS Management System Failure
☐ Odor Complaint	☐ RMP	☐ Other

Describe Event / What Happened

An operator finished making a batch of Selexsorb on the PK blender. When the operator opened the valve to discharge the product into the bag nothing came out. The operator opened and closed the valve a few times and still no powder came out. The operator then went up to the top lid of the PK blender and began to slowly loosen it. After the second turn of the screw assembly the lid came off of the blender in the direction of the operator, hitting the support bar and also striking the operator's hard hat, covering him with material. The operator did not sustain any injuries.

Immediate Corrective Action or Response

Supervisor sent the operator to take a shower and get cleaned up. Had two other operators clean the area after allowing the dust to settle in the room.

Immediate Cause

Pressure build up in blender from making a batch.

Spill Release Type(s)	Non RQ Spill / Release						
Chemical(s) Involved	CAS #	Phy. State	Air	Land	Water	Contmt	Units
Selectsorb	N/A	Dust	0	0	0	30	lbs

Disposition of Material	Materials cleaned up and disposed of			
Weather Conditions	Skies:	Temperature:	Wind Direction:	Wind Speed:

Cause Narrative

Pressure build up inside of blender due to discharge valve not opening while attempting to unload batch.

Contributing Causes	Root/Primary Causes		
Control panel readout did not match valve position	138 - Human Factors Engineering	140 - Workplace Layout	143 - Control/Display Integration/Arrangement LTA
System cannot detect pressure is present	138 - Human Factors Engineering	160 - Intolerant System	161 - Errors Not Detectable
Working batch sheet does not have all of the precautions that the manufacturing document has	111 - Procedures	117 - Misleading/Confusing	118 - Format Confusing or LTA
current tab allows lid to slide off	15 - Design Input/Output	16 - Design Input LTA	16 - Design Input LTA

Explanation of Root Causes
143 - there is an air line to the valve that was not opened. The panel indicator noted that the valve was in the open position, however, with the air off the valve did not open. The controls are not interlocked **161 - currently cannot detect that pressure is in vessel. There is no indication of pressure. The operator loosen the lid in a normal fashion and pressure did not vent before the lid came off.** **111 - The Batch sheet does not have all of the warnings that are specified in the Manufacturing document regarding possible pressure buildup** **16 - The current lid design does not allow the to be easily retained to the vessel**

Any known or potential off-site impacts?	No	PSM Incident?	No	Estimated Cost:	2,000.00 USD
Investigation Team	John R Crawford; Leon Zavodnik; Alexander Donald; Seth Diewald; John Bodmann; Brian Beller; Terrence M Vanderbosch; Noemi Trent; Sean M Holly				

Item	Corrective Action(s) to prevent recurrence	Responsible Person	Target Date	Final Closed Date	VC Req	VE Req
1	Allocate resources to redesign current valve to allow for feedback on valve position with appropriate interlocks to ensure valve is open	Raymond Hazlerig/NA/BASF	08/05/2015	08/03/2015	N	N
2	Investigate if pressure monitoring can be installed on blender so operator knows that pressure has built up	Raymond Hazlerig/NA/BASF	10/05/2015	09/29/2015	N	N
3	Modify batch sheets for appropriate warnings and actions to take during batch processing to ensure blender does not pressurize	John Bodmann/BASF-CATALYSTS/BASF	02/19/2015	02/16/2015	N	N
4	Redesign lid and tabs to prevent lid from popping off if pressure builds up. See if lid can be attached to lip of blender	Brian Beller/NA/BASF	03/27/2015	02/12/2015	N	N
5	Review and Modify PK operating procedures to account for the possibility of pressure in the vessel	John Bodmann/BASF-CATALYSTS/BASF	06/05/2015	06/04/2015	N	N
6	Modify all batch sheets for PK products that describe that venting through top port should occur (Cr-0218P, etc). Change sheets to stop this practice	John Bodmann/BASF-CATALYSTS/BASF	06/25/2015	06/24/2015	N	N
7	Modify all batch sheets for PK products that describe that venting through top port should occur if applicable (Pill mix). Change sheets to stop this practice	Justin Quach/NA/BASF	06/25/2015	03/16/2015	N	N

Approved By:	
Manager / Dept. Head	**Leon Zavodnik 02/19/2015 10:55 AM**
EHS Unit Coordinator	**Dean R Gadoury 02/19/2015 10:59 AM**
	Confidential